

WE CLAIM:

1. A polyester powder coating composition having as the essential elements:

- from 85 to 96 wt% of a polyester resin formed by reacting an aliphatic glycol and one or more dicarboxylic acids, wherein the aliphatic glycol is 5 to 90% on a molar basis 1,3-propanediol;
- from 4 to 15 wt% of a triglycidyl isocyanurate crosslinking agent; and
- optionally conventional catalysts, auxiliary agents, and additives.

2. The powder coating composition of Claim 1 wherein the aliphatic glycol is selected from the group consisting of 1,3-butylene glycol, 1,4-butylene glycol, ethylene glycol, propylene glycol, 2-methyl-1,3-propanediol, 1,6-hexanediol, and neopentyl glycol.

3. The powder coating composition of Claim 2 wherein the aliphatic glycol is neopentyl glycol.

4. The powder coating composition of Claim 2 further comprising minor amounts of branching agents selected from the group consisting of trimethylolpropane, trimethylolethane, and pentaerythritol.

5. The powder coating composition of Claim 1 wherein the polyester resin comprises:

- neopentyl glycol substituted with 15 to 50% on a molar basis 1,3-propanediol; and
- one or more dicarboxylic acids.

6. The powder coating composition of Claim 1 wherein the dicarboxylic acids are selected from the group consisting of saturated, unsaturated, aliphatic, or aromatic dicarboxylic acids.

7. The powder coating composition of Claim 6 wherein the dicarboxylic acids are selected from the group consisting

of phthalic, isophthalic, terephthalic, naphthalenedicarboxylic, sebacic, maleic, fumaric, succinic, adipic, azelaic, malonic or mixtures thereof.

8. The powder coating composition of Claim 7 wherein the dicarboxylic acids are selected from isophthalic and terephthalic, separately or a mixture thereof.

9. The powder coating composition of Claim 8 wherein terephthalic and isophthalic acid are used in a molar ratio of terephthalic to isophthalic of about 100/0 to 0/100.

10. The powder coating composition of Claim 9 wherein the molar ratio of terephthalic to isophthalic acid is about 80/20.

11. The powder coating composition of Claim 1 wherein 5-90 % molar of the aliphatic glycol is 1,3-propanediol.

12. The powder coating composition of Claim 1 further comprising the optional addition of conventional auxiliary agents and additives.

13. The powder coating composition of Claim 1 further comprising the ratio of epoxy to carboxyl is in the range of 0.5/1 to 6/1.

14. A polyester powder coating composition having as the essential elements:

a) a polyester resin characterized by a acid value of 10 to 100 mg KOH/g formed by reacting neopentyl glycol with a mixture of terephthalic acid and isophthalic acid, wherein the ratio of terephthalic to isophthalic is in the molar range of 100/0 to 0/100, and wherein 15-50% on a molar basis of the neopentyl glycol is substituted with 1,3-propanediol; and

b) a triglycidyl isocyanurate.

15. Any coated product made using the powder coating of Claim 1.